SAMSUNG TECHWIN

NETWORK CAMERA

User Manual

SND-1011

CE

SAMSUNG

Network Camera

User Manual

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- **Design and specifications are subject to change without prior notice.**
- **The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.**
  Note that the security and other related issues caused by the unchanged password shall be responsible for the user.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings, Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

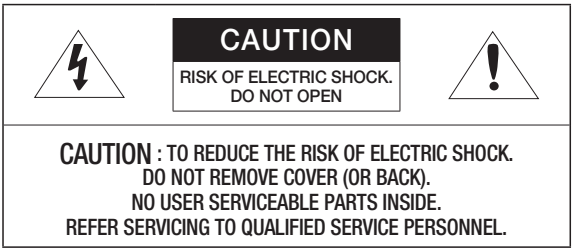
13. Unplug this apparatus during lighting storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENNINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

CAUTION


CAUTION
RISK OF ELECTRIC SHOCK.
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

EXPLANATION OF GRAPHICAL SYMBOLS

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Class I construction

An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

Battery

Batteries(battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.

CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

The BNC Out terminal of the product is provided for easier installation, and is not recommended for monitoring purposes.
If you keep the BNC cable connected, a risk of lightening may cause damage or malfunction to the product.

Please use the input power with just one camera and other devices must not be connected.

overview

Please read the following recommend safety precautions carefully.

- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.
- Do not install near any magnetic sources.
- Do not block any ventilation openings.
- Do not place heavy items on the product.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : In case of providing information for helping of product's usages
- Notice : If there's any possibility to occur any damages for the goods and human caused by not following the instruction

※ Please read this manual for the safety before using of goods and keep it in the safe place.

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PRODUCT FEATURES

- **Multi-Streaming**
  This network camera can display videos in different resolutions and qualities simultaneously using different CODECs.
- **Web Browser-based Monitoring**
  Using the Internet web browser to display the image in a local network environment.
- **Alarm**
  If an event occurs, the event-related video will be transferred to the email specified by the user, or saved to the SD memory.
- **Video Motion Detection**
  Detects a motion from the video before triggering an event.
- **Face Detection**
  Recognizes a face from the camera input video, or transfers a clearer image of your specified area.
- **Auto Detection of Disconnected Network**
  Detects network disconnection before triggering an event.
- **ONVIF Compliance**
  For more information, refer to www.onvif.org.

ONVIF
Driving network video through global standardization

RECOMENDED PC SPECIFICATIONS

- CPU : Intel(R) Core(TM)2 2.4 GHz or higher
- Operating System : Windows XP, VISTA, 7
  Mac OS
- Resolution : 1280X1024 pixels or higher
- RAM : 2GB or higher
- Web Browser : Internet Explorer 7.0 or later, Firefox 3.0 or later, Chrome 8.0 or later,
  Safari 4.0 or later
  - Neither a beta test version unlike the version released in the company website nor the developer version will be supported.
  - It is recommended to connect to IPv6 in Windows 7.

- Video Memory : 256MB or higher

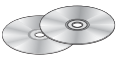
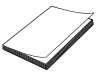
  - If the driver of the video graphic adapter is not installed properly or is not the latest version, the video may not be played properly.
  - For a multi-monitoring system involving at least 2 monitors, the playback performance can be deteriorated depending on the system.

RECOMENDED MICRO SD/SDHC MEMORY CARD SPECIFICATIONS

- 2GB ~ 32GB
- To ensure proper recording of video data, it is recommended you use a memory card that supports at least read/write speed 10Mbps and Class 6.

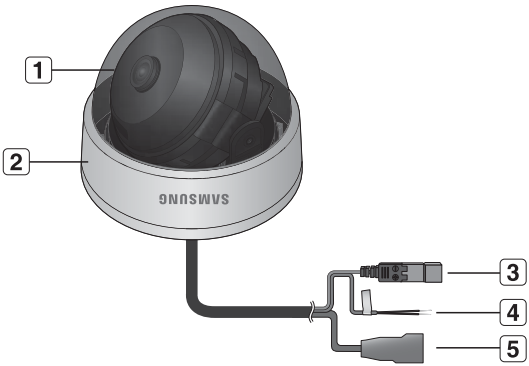
WHAT'S INCLUDED

Please check if your camera and accessories are all included in the product package.

Appearance	Item Name	Quantity	Description
	Camera	1	
	User Manual, Installer S/W CD, CMS S/W DVD	2	
	Quick Guide	1	
	Cable for the testing monitor	1	Used to test the camera connection to a portable display device
	Iron Screw	3	Used for fixing to an iron plate

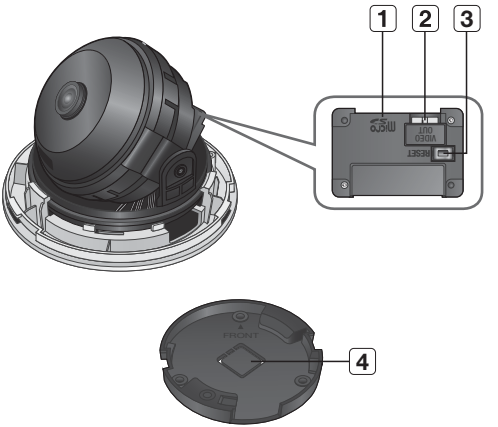
AT A GLANCE

Appearance



Item		Description	
1	Dome Cover	Dome cover for the lens and unit protection.	
2	Main unit	Main unit includes the lens, switch board, PCB boards and screws.	
3	Power Port	Used to plug the power cable.	
4	Alarm Input Port	BROWN = Alarm IN	Used to connect the alarm input sensor.
		BLACK = GND	Used for earth-grounding.
5	Network Port	Used to connect a PoE or LAN cable.	

Components



Item	Description
1 Micro SD Memory Card Compartment	Compartment for the Micro SD memory card.
2 Monitor Out	Using the test monitor cable, you can connect to a mobile display for camera test. (for installation)
3 Reset Button	Resets the camera settings to the default. Press and hold for about 5 seconds to reboot the system. If you reset the camera, the network settings will be adjusted so that DHCP can be enabled. If there is no DHCP server in the network, you must run the IP Installer program to change the basic network settings such as IP address, Subnet mask, Gateway, etc., before you can connect to the network.
4 Wiring Cover	Arrange the cables through this hole.

INSTALLATION

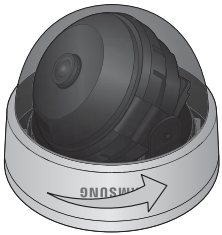
Precautions before installation

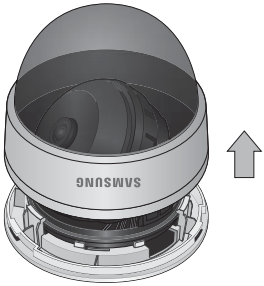
Ensure you read out the following instructions before installing the camera:

- Select an installation site (ceiling or wall) that can endure at least 5 times of the camera weight.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal belongings from the site, just in case.

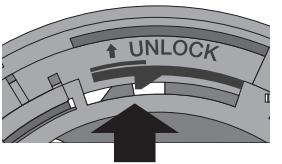
Installing the camera

1. Use one hand to hold the camera's bottom part and turn the cover counterclockwise with another hand to separate it. Removing the cover reveals the main unit.

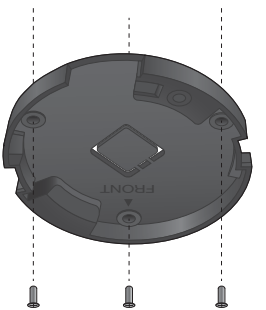




2. Turn the bracket counterclockwise while pressing the locker ratchet outwards to separate it.
3. Use the provided screws (x3) to fix the bracket to a desired position (ceiling or wall).
   - Ensure that the <**FRONT**> label on the bracket faces the direction for camera monitoring.

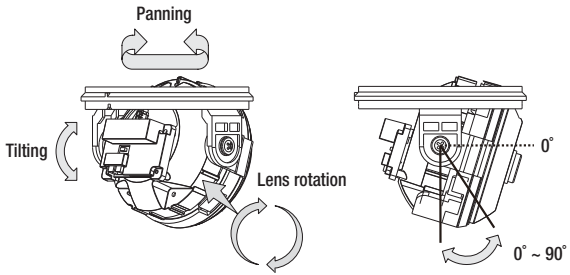


4. Arrange the cables through the bracket to the ceiling or wall.
   If you intend to drill a hole in the installation site for the wiring purpose, remove the wiring cover by force to reveal a hole. Arrange the cables through the hole. If you intend to arrange the cables without drilling a hole, use the empty area opposite to the <**FRONT**> label side for the wiring purpose.
5. Mount the main unit onto the bracket.
   Align the marking hole of the main unit with the <**FRONT**> label of the bracket, and turn the unit in the <**LOCK**> direction.
6. Adjust the lens in a desired direction.
   For adjusting the lens direction, refer to "**Adjusting the monitoring direction for the camera**". (page 15)
7. Fix the cover to the main unit.
   Fit the protruding part inside the cover into the corresponding hole of the main unit, and turn the cover to fix it.



Wiring Cover

Adjusting the monitoring direction for the camera



❖ **Adjusting the monitoring direction**

You can adjust the camera direction only when the camera is fixed on the ceiling. Then, turning the camera to the left or right is referred to as "Panning", while tilting the angle is "Tilting". For panning, the panning limit is 176° for the clockwise, and 176° for the counterclockwise, a total of 352° enabled; further rotation is stopped by the stopper.

- Adjust the panning angle so that the camera settles in the right horizontal position. You can adjust the panning up to 176° in each one direction, and 176° in the other direction, a total of 352°.
- Adjust the tilting angle so that the camera settles in the right vertical position. You can adjust the tilting between 0° and 90°.
- The total rotation range is 355°. You can make adjustment in one direction up to 125°, and 230° in the other direction.

❖ **Methods of adjustment**

- The case of wall installation

① After mounting the camera on the wall, adjust the panning angle so that the camera faces a desired direction when tilting.

② Adjust the Rotate position to fit the video to the screen borders.

③ Then, adjust the tilting angle so that the camera faces the monitoring direction.

- The case of ceiling installation

① After mounting the camera on the ceiling, adjust the panning angle according to the monitoring direction. You should adjust the panning angle lest that the video be displayed upside down on the monitor.

② Adjust the Rotate position to fit the video to the screen borders.

③ Then, adjust the tilting angle so that the camera faces the monitoring direction.

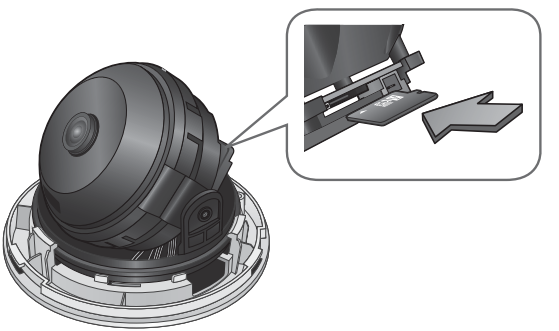
▪ For smoother Rotate adjustment, set the Tilt position between 60° ~ 80°.

INSERTING/REMOVING AN SD MEMORY CARD

- Disconnect the power cable from the camera before inserting the SD memory card.

Inserting an SD Memory Card

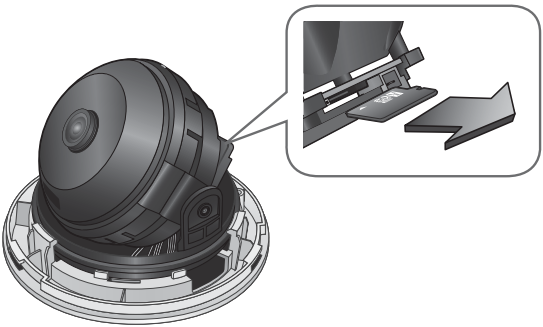
Push the SD memory card in the direction of the arrow shown in the diagram.



- Do not insert the SD memory card while it's upside down by force. Otherwise, it may damage the SD memory card.

Removing an SD Memory Card

Gently press down on the exposed end of the memory card as shown in the diagram to eject the memory card from the slot.



- Pressing too hard on the SD memory card can cause the card to shoot out uncontrollably from the slot when released.
- To remove the SD memory card, set <**Record**> to <**Off**> from <**SD record**> and press [**Apply (** ✓ **)**]. (page 60)
- If you have saved data in the SD memory card, removing the SD memory card prior to setting record to OFF will cause damage to the data stored in the card.

MEMORY CARD INFORMATION (NOT INCLUDED)

What is a memory card?

The memory card is an external data storage device that has been developed to offer an entirely new way to record and share video, audio, and text data using digital devices.

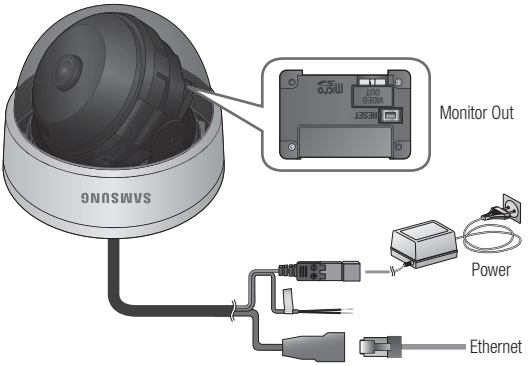
Selecting a memory card that's suitable for you

Your camera supports Micro SD/SDHC memory cards.
You may, however, experience compatibility issues depending on the model and make of the memory card.

For your camera, we recommend you use a memory card from the following manufacturers:
Micro SD/SDHC Memory Card : Sandisk, Transcend

Playback performance can be affected depending on the speed of memory card, so use the high-speed memory card.

CONNECTING WITH OTHER DEVICE



- The BNC Out terminal of the product is provided for easier installation, and is not recommended for monitoring purposes.
  If you keep the BNC cable connected, a risk of lightening may cause damage or malfunction to the product.

Ethernet Connection

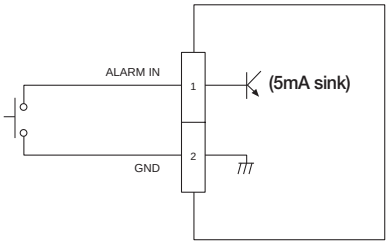
Connect the Ethernet cable to the local network or to the Internet.

Power Supply

Use the screwdriver to connect each line (+, –) of the power cable to the corresponding power port of the camera.

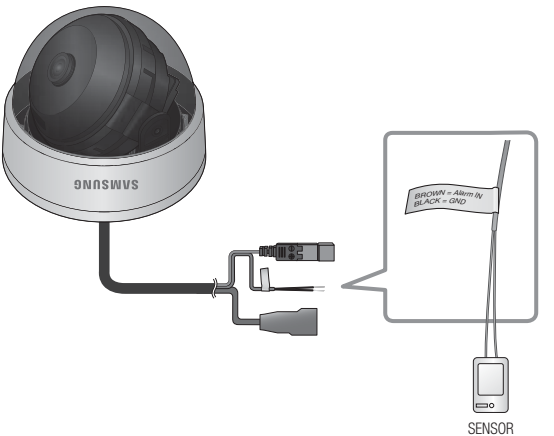
- Be careful not to reverse the polarity when you connect the power cable.
  You can also use a router featuring PoE (Power over Ethernet) to supply power to the camera.
- If both PoE and DC 12V are supplied, the product will operate with the first-applied power source.
- Please make sure the monitor and camera are turned off when connecting them.

Alarm input Wiring Diagram



To connect to the alarm input port

Connect the alarm input signal to the cable input port.



Port	Description	Port	Description
ARM-IN	Alarm Input Sensor Port	**GND**	Earth-grounding Port

To connect the alarm input signal

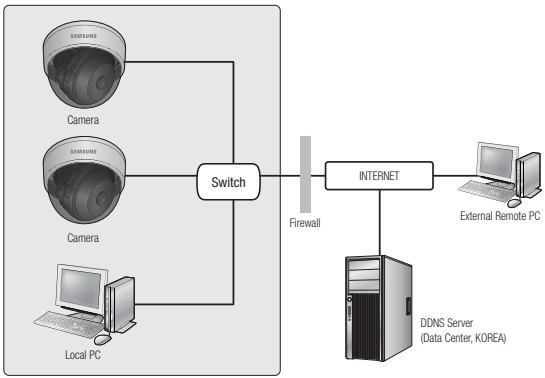
Connect one strand of each signal line (2-strand) of the sensors to the [**ARM-IN**] port, and connect the other strand to the [**GND**] port.

You can set up the network settings according to your network configurations.

CONNECTING THE CAMERA DIRECTLY TO LOCAL AREA NETWORKING

Connecting to the camera from a local PC in the LAN

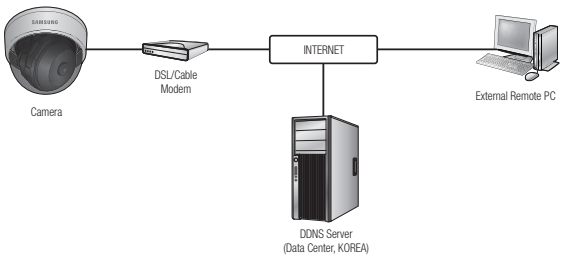
1. Launch an Internet browser on the local PC.
2. Enter the IP address of the camera in the address bar of the browser.



<Local Network>

- A remote PC in an external Internet out of the LAN network may not be able to connect to the camera installed in the intranet if the port-forwarding is not properly set or a firewall is set. In this case, to resolve the problem, contact your network administrator.
- By factory default, the IP address will be assigned from the DHCP server automatically. If there is no DHCP server available, the IP address will be set to 192.168.1.100. To change the IP address, use the IP Installer. For further details on IP Installer use, refer to "**Static IP Setup**". (Page 26)

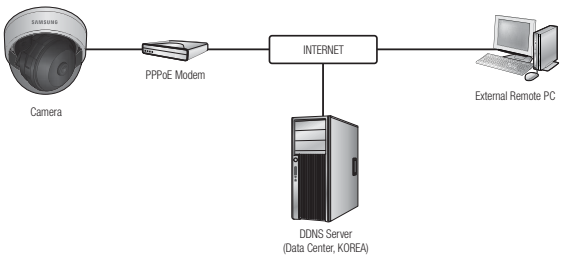
CONNECTING THE CAMERA DIRECTLY TO A DHCP BASED DSL/CABLE MODEM



1. Use the cross LAN cable to connect the network cable directly to your PC.
2. Run the IP Installer and change the IP address of the camera so that you can use the web browser on your desktop to connect to the Internet.
3. Use the Internet browser to connect to the camera.
4. Move to [**Setup**] page.
5. Move to [**Network**] – [**DDNS**] and configure the DDNS settings.
6. Move to [**Network**] – [**Interface**], and set the network type to [**DHCP**].
7. Connect the camera, which was removed from your PC, directly to the modem.
8. Restart the camera.

- For registering the DDNS settings, refer to "**Registering with DDNS**". (page 54)
- For configuring the DDNS settings, refer to "**DDNS**". (page 53)
- For setting the network type, refer to "**Interface**". (page 52)

CONNECTING THE CAMERA DIRECTLY TO A PPPoE MODEM

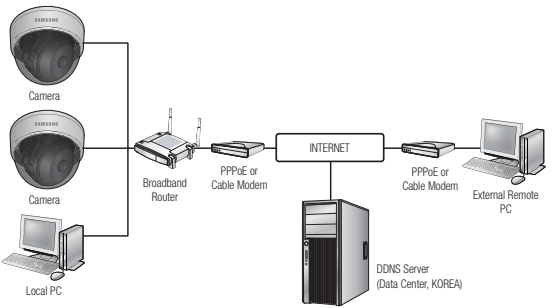


1. Use the cross LAN cable to connect the network cable directly to your PC.
2. Run the IP Installer and change the IP address of the camera so that you can use the web browser on your desktop to connect to the Internet.
3. Use the Internet browser to connect to the camera.
4. Move to [**Setup**] page.
5. Move to [**Network**] – [**DDNS**] and configure the DDNS settings.
6. Move to [**Network**] – [**Interface**], and set the network type to [**PPPoE**].
7. Connect the camera, which was removed from your PC, directly to the modem.
8. Restart the camera.

- For registering the DDNS settings, refer to "**Registering with DDNS**". (page 54)
- For configuring the DDNS settings, refer to "**DDNS**". (page 53)
- For setting the network type, refer to "**Interface**". (page 52)

CONNECTING THE CAMERA TO A BROADBAND ROUTER WITH THE PPPoE/CABLE MODEM

This is for a small network environment such as homes, SOHO and ordinary shops.



Configuring the network settings of the local PC connected to a Broadband Router

Configuring the network settings of the local PC connected to a Broadband Router, follow the instructions below.

- Select : <**Network Neighborhood**> → <**Properties**> → <**Local Area Connection**> → <**Properties**> → <**General**> → <**Internet Protocol (TCP/IP)**> → <**Properties**> → <**Obtain an IP address automatically**> or <**Use the following IP address**>.
- Follow the instructions below if you select <**Use the following IP address**>:

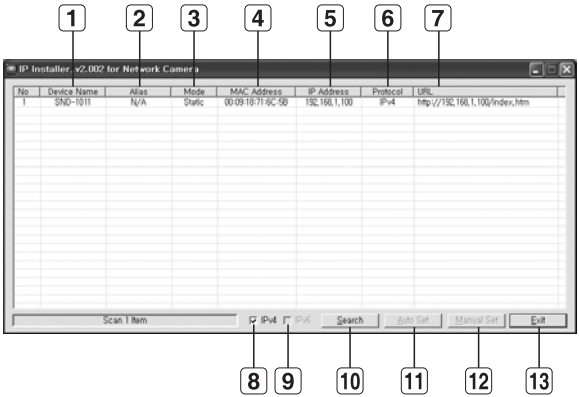
  ex1) If the address (LAN IP) of the Broadband Router is 192.168.1.1
  IP address : 192.168.1.100
  Subnet Mask : 255.255.255.0
  Default Gateway : 192.168.1.1

  ex2) If the address (LAN IP) of the Broadband Router is 192.168.0.1
  IP address : 192.168.0.100
  Subnet Mask : 255.255.255.0
  Default Gateway : 192.168.0.1

  ex3) If the address (LAN IP) of the Broadband Router is 192.168.xxx.1
  IP address : 192.168.xxx.100
  Subnet Mask : 255.255.255.0
  Default Gateway : 192.168.xxx.1

- For the address of the Broadband Router, refer to the product's documentation.
- Refer to the "**Port Range Forward (Port Mapping) Setup**" section of the Broadband Router's documentation. (Page 31)

BUTTONS USED IN IP INSTALLER



Item	Description
1 **Device Name**	Model name of the connected camera. Click the column to sort the list by model name. However, search will be stopped if clicked during the search.
2 **Alias**	This function is not currently implemented.
3 **Mode**	Displays either <**Static**> or <**Dynamic**> for the current network connection status.
4 **MAC(Ethernet) Address**	Ethernet address for the connected camera. Click the column to sort the list by Ethernet address. However, search will be stopped if clicked during the search.
5 **IP Address**	IP address. Click the column to sort the list by IP address. However, search will be stopped if clicked during the search. The factory default is "**192.168.1.100**".
6 **Protocol**	Network setting for the camera. The factory default is "IPv4". Cameras with the IPv6 setting will be displayed "IPv6".

Item	Description
7 URL	DDNS URL address enabling access from the external Internet. However, this will be replaced with the <**IP Address**> of the camera if DDNS registration has failed.
8 IPv4	Scans for cameras with the IPv4 setting.
9 IPv6	Scans for cameras with the IPv6 setting. Activated in an IPv6 compliant environment.
10 Search	Scans for cameras that are currently connected to the network. However, this button will be grayed out if neither IPv4 nor IPv6 is checked.
11 Auto Set	The IP Installer automatically configures the network settings.
12 Manual Set	You should configure the network settings manually.
13 Exit	Exits the IP Installer program.

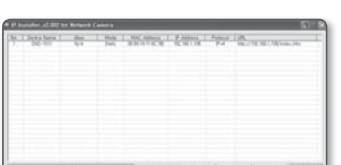
- For the IP installer, use only the installer version provided in the installation CD or use the latest one if available. You can download the latest version from the Samsung web site (www.samsungipolis.com).

STATIC IP SETUP

Manual Network Setup

Run <**IP Installer_vX.XX.exe**> to display the camera search list.
At the initial startup, both [**Auto Set**] and [**Manual Set**] will be grayed out.

- For cameras found with the IPv6 setting, these buttons will be grayed out as the cameras do not support this function.



1. Select a camera in the search list.
   Find the MAC (Ethernet) address labeled on the rear of the camera.
   Both the [**Auto Set**] and [**Manual Set**] buttons will be activated.
2. Click [**Manual Set**].
   The Manual Setting dialog appears.
   The default values of <**IP Address**>, <**Subnet Mask**>, <**Gateway**>, <**HTTP Port**> and <**VNP Port**> of the camera will be displayed.

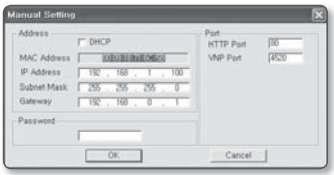
3. In the <**Address**> pane, provide the necessary information.
   - MAC (Ethernet) Address : The MAC (Ethernet) address of the applicable camera will be set automatically so you don't need to input it manually.

▪ You can configure the static IP settings only if the DHCP checkbox is unchecked.

If not using a Broadband Router

For setting <**IP Address**>, <**Subnet Mask**>, and <**Gateway**>, contact your network administrator.

4. In the <**Port**> pane, provide necessary information.
   - HTTP Port : Used to access the camera using the Internet browser, defaulted to 80. Use the spin button to change the HTTP Port value.
   - VNP Port : Used to control the video signal transfer, defaulted to 4520.



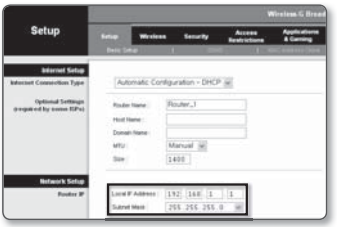
5. Enter the password.
   This is the login password for the "**admin**" user who accesses the camera.
   The default password is "**4321**".

▪ The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
Note that the security and other related issues caused by the unchanged password shall be responsible for the user.

6. Click [**OK**].
   Manual network setup will be completed.

If using a Broadband Router

- IP Address : Enter an address falling in the IP range provided by the Broadband Router.
  ex) 192.168.1.2~254,
  192.168.0.2~254,
  192.168.XXX.2~254
- Subnet Mask : The <**Subnet Mask**> of the Broadband Router will be the <**Subnet Mask**> of the camera.
- Gateway : The <**Local IP Address**> of the Broadband Router will be the <**Gateway**> of the camera.



- The settings may differ depending on the connected Broadband Router model. For more information, refer to the user manual of the applicable router.
- Refer to the "**Port Range Forward (Port Mapping) Setup**" section of the Broadband Router's documentation. (Page 31)

If the Broadband Router has more than one camera connected

Configure the IP related settings and the Port related settings distinctly with each other.

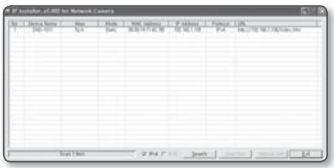
Category		Camera #1	Camera #2
IP related settings	IP Address Subnet Mask Gateway	192.168.1.100 255.255.255.0 192.168.1.1	192.168.1.101 255.255.255.0 192.168.1.1
Port related settings	HTTP Port VNP Port	8080 4520	8081 4521

- If the <**HTTP Port**> is set other than 80, you must provide the <**Port**> number in the address bar of the Internet browser before you can access the camera.
  ex) http://IP address : HTTP Port
  http://192.168.1.100:8080

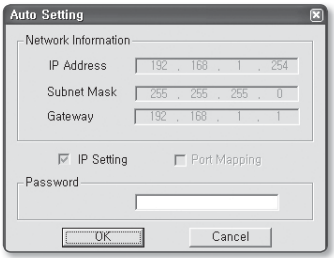
Auto Network Setup

Run <**IP Installer_vX.XX.exe**> to display the camera search list.
At the initial startup, both [**Auto Set**] and [**Manual Set**] will be grayed out.

- For cameras found with the IPv6 setting, these buttons will be grayed out as the cameras do not support this function.



1. Select a camera in the search list.
   Find the MAC (Ethernet) address labeled on the rear of the camera.
   Both the [**Auto Set**] and [**Manual Set**] buttons will be activated.
2. Click [**Auto Set**].
   The Auto Setting dialog appears.
   The <**IP Address**>, <**Subnet Mask**>, and <**Gateway**> will be set automatically.
3. Enter the password.
   This is the login password for the "**admin**" user who accesses the camera. The default password is "**4321**".
   - The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
     Note that the security and other related issues caused by the unchanged password shall be responsible for the user.
4. Click [**OK**].
   Auto network setup will be completed.



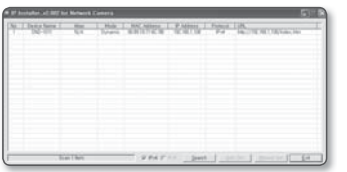
DYNAMIC IP SETUP

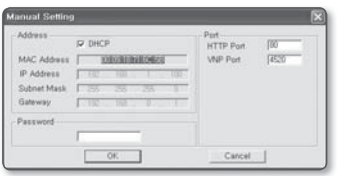
Dynamic IP Environment Setup

- Example of the Dynamic IP environment
  - If a Broadband Router, with cameras connected, is assigned an IP address by the DHCP server
  - If connecting the camera directly to modem using the DHCP protocols
  - If IPs are assigned by the internal DHCP server via the LAN

Checking the Dynamic IP

1. Run the IP Installer on the user's local machine to display cameras allocated with <**Dynamic IP**> addresses in the list.
2. Select a camera in the list, and click [**Manual Set**] to check the <**Dynamic IP**> of the camera.
   If you uncheck <**DHCP**>, you can change IP to <**Static**>.





PORT RANGE FORWARD (PORT MAPPING) SETUP

If you have installed a Broadband Router with a camera connected, you must set the port range forwarding on the Broadband Router so that a remote PC can access the camera in it.

Manual Port Range Forwarding

1. From the Setup menu of the Broadband Router, select <**Applications & Gaming**> - <**Port Range Forward**>. For setting the port range forward for a third-party Broadband Router, refer to the user guide of that Broadband Router.
2. Select <**TCP**> and <**UDP Port**> for each connected camera to the Broadband Router.
   Each port number for the Broadband Router should match that specified in <**Network**> - <**Port**> from the camera's Setup menu.
3. When done, click [**Save Settings**]. Your settings will be saved.

- Above sample instructions are based on the CISCO's Broadband Router (Model: LINKSYS).
- The settings may differ depending on the connected Broadband Router model. For more information, refer to the user manual of the applicable router.

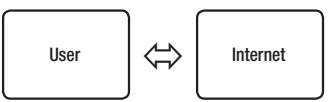
Setting up Port Range Forward for several network cameras

When several network cameras are connected to one Broadband Router device, you should forward the TCP 943 port of the router to the TCP 943 port of a connected camera.

- If you don't set properly the TCP 943 port of the router, you cannot get any video stream from the web page of the camera.

- TCP 943 port is a port for the Silverlight policy server of a camera.

When Camera1 and Camera2 are connected to a router :



Broadband Router			
Start	End	Protocol	IP Address
943	943	TCP	192.168.1.100
3000	3000	TCP/UDP	192.168.1.100
3001	3001	TCP/UDP	192.168.1.101
4520	4520	TCP/UDP	192.168.1.100
4521	4521	TCP/UDP	192.168.1.101
8080	8080	TCP/UDP	192.168.1.100
8081	8081	TCP/UDP	192.168.1.101

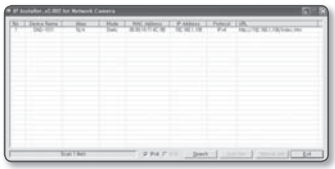
Camera1 (192.168.1.100)	
Web Server Port	8080
VNP Port	4520
RTSP Port	3000
Policy Server Port	943

Camera2 (192.168.1.101)	
Web Server Port	8081
VNP Port	4521
RTSP Port	3001
Policy Server Port	943

- You can set a rule of Port Forwarding on the Broadband Router device through its configuration web page.
- You cannot change the Silverlight policy server port of a camera.
- You can change the ports of the camera except the policy server port through its configuration web pages.

CONNECTING TO THE CAMERA FROM A SHARED LOCAL PC

1. Run the IP Installer.
   It will scan for connected cameras and display them as a list.
2. Double-click a camera to access.
   The Internet browser starts and connects to the camera.



- Access to the camera can also be gained by typing the camera's IP address in the address bar of the Internet browser.

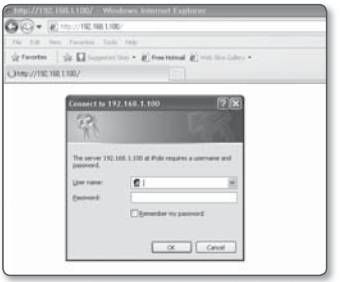
CONNECTING TO THE CAMERA FROM A REMOTE PC VIA THE INTERNET

Since using the IP Installer on a remote computer that is not in the Broadband Router's network cluster is not allowed, users can access cameras within a Broadband Router's network by using the camera's DDNS URL.

1. Before you can access a camera in the Broadband Router network, you should have set the port range forward for the Broadband Router.
2. From the remote PC, launch the Internet browser and type the DDNS URL address of the camera, or the IP address of the Broadband Router in the address bar.
   ex) http://www.samsungipolis.com/[Product ID]

CONNECTING TO THE CAMERA

Normally, you would



1. Launch the Internet browser.
2. Type the IP address of the camera in the address bar.
   ex) • IP address (IPv4) : 192.168.1.100
   → http://192.168.1.100
   - the Login dialog should appear.
   • IP address (IPv6) : 2001:230:abcd:ffff:0000:0000:ffff:1111
   → http://[2001:230:abcd:ffff:0000:0000:ffff:1111] - the Login dialog should appear.

If the HTTP port is other than 80

1. Launch the Internet browser.
2. Type the IP address and HTTP port number of the camera in the address bar.
   ex) IP address : 192.168.1.100:HTTP Port number(8080)
   → http://192.168.1.100:8080 - the Login dialog should appear.

Using URL

1. Launch the Internet browser.
2. Type the DDNS URL of the camera in the address bar.
   ex) URL address : http://www.samsungipolis.com/[Product ID]
   - the Login dialog should appear.

To check the DDNS address

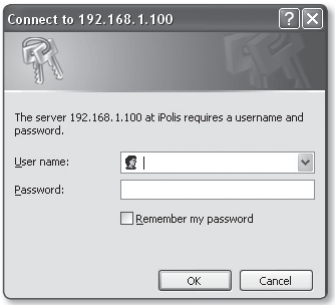
If the camera is connected directly to the DHCP cable modem, DSL modem, or PPPoE modem, the IP address of your network will be changed each time you try to connect to the ISP (Internet Service Provider) server.
If this is the case, you will not be informed of the IP address changed by DDNS.

Once you register a dynamic IP-based device with the DDNS server, you can easily check the changed IP when you try to access the device.
To add the IP address to the <**DDNS**> server, visit www.samsungipolis.com and register your device, and set the DDNS option to <**Samsung DDNS**> before providing the host name for the DDNS server.

LOGIN

The default user ID is "**admin**", and the default password is "**4321**".

1. Enter "**admin**" in the <**User Name**> input box.
2. Enter "**4321**" in the <**Password**> input box.
   If the password is changed, enter the changed password instead.
3. Click [**OK**].
   If you have logged in successfully, you will the Live Viewer screen.



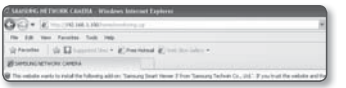
- For security purposes, ensure that you change the password in <**System**> - <**User**>.
  The administrator ID, "**admin**", is fixed and can not be changed.
- The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
  Note that the security and other related issues caused by the unchanged password shall be responsible for the user.
- If you check the "**Remember my password**" option when your input is done, in future you will be logged in automatically without being prompted to enter the login information.

- You will experience the best video quality if the screen size is 100%. Reducing the ratio may cut the image on the borders.

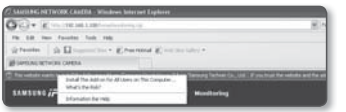
INSTALLING ACTIVEX

If connecting to a camera for the first time, you will see the installation message. Then, install the required ActiveX to access the camera and control the video from it in real time.

1. When accessing the start screen of the monitoring page, click the yellow warning message in the top of the page.



2. Click <**Install This Add-on for All users on This Computer...**>.



3. The security warning popup appears, click [**Install**].
4. When the required ActiveX is installed properly after your access to the camera, the Live screen should appear.

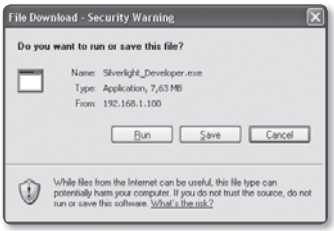
Internet Explorer - Security Warning
Do you want to install this software?
Name: Samsung Smart Viewer
Publisher: Samsung Techwin Co., Ltd.
More options
Install
Don't Install
While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?

INSTALLING SILVERLIGHT RUNTIME

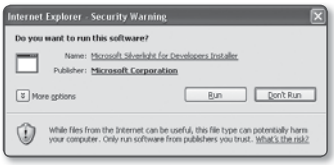
If your PC has not installed Silverlight Runtime or has just installed an old runtime version, you will be redirected to the Silverlight Runtime installation page automatically when accessing the web viewer.

1. Click <**Click Here**>.

2. When the file download dialog pops up, click <**Run**>.

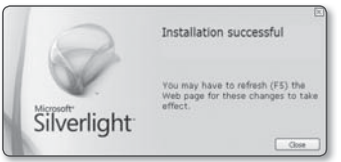

File Download - Security Warning
Do you want to run or save this file?
Name: Silverlight_Developer.exe
Type: Application, 7,63 MB
From: 192.168.1.100
Run
Save
Cancel
While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. What's the risk?

3. When the download is completed, click <**Run**>.


Internet Explorer - Security Warning
Do you want to run this software?
Name: Microsoft Silverlight for Developers Installer
Publisher: Microsoft Corporation
More options
Run
Don't Run
While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. What's the risk?

4. The Silverlight Runtime installation page will be displayed. <**Install now**> to proceed with the installation.

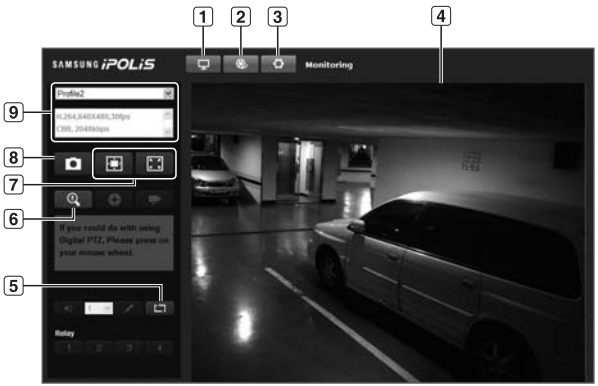
5. When done, click <**Close**>.


Installation successful
You may have to refresh (F5) the Web page for these changes to take effect.
Microsoft
Silverlight
Close

6. Close and restart the web browser, and try to access the Web Viewer.
When Silverlight Runtime is properly installed, you will see the Live screen.

- For normal installation, set the Block Popup setting as follows:
  ex) **Internet Explorer → Tools → Block Popup → Turn Off Pop-up Blocker (B)**
- However, MAC OS X users who are not connected to the Internet can use the provided installation CD to install Silverlight Runtime (Run the executable "Silverlight_xxx.dmg" in the CD. You will be guided through installation of the software).

USING THE LIVE SCREEN



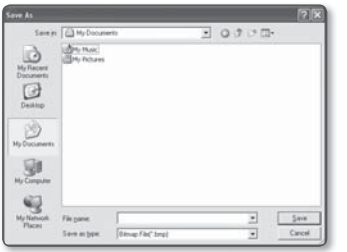
Item	Description
1 **Monitoring**	Move to the monitoring screen.
2 **Playback**	Switch to the monitoring screen that plays recording data in the SD memory.
3 **Setup**	Move to the Setup screen.
4 **Viewer Screen**	Displays the Live video on the screen.
5 **Hide the alarm indicator**	Hides the alarm indicator near the border of the viewer screen. ■ In the following cases, the alarm message will pop up on the border of the viewer. - If an event (alarm, motion detection) occurs - If the camera is turned off - If the network is disconnected

Item	Description
6 Digital zoom	You can use the mouse wheel to activate the digital zooming.
7 Screen Optimization, Full Screen	Adjust the screen to the optimal size, and display the Full Screen icon on the Live screen.
8 Capture	Saves the snapshot as an image file in the .bmp or .jpg format.
9 Video Format	You can select a profile type in <**Video profile**> under the <**Video**> setup menu. If the "Invalid codec" message is displayed, select a profile type from the profile list again.

- Web pages related to playback and setting menus are accessible only by the admin. For other user accounts, the buttons will be deactivated.

To capture the snapshot

1. Click [ ] on the scene to capture.
   The Capture dialog should appear.
2. Click [**Save**] button.
   The screenshot will be saved in the specified path.



- If you encounter an interrupted video when capturing the image with IE8 on a Windows 7-based PC, deselect "**Turn On Protected Mode**" from "**Tools – Internet Options – Security**".

To fit the full screen

1. Click the [**Full Screen (** **)**] button.
   The corresponding button will be displayed in the Viewer.
2. Click the button.
   This will fit the Viewer to the full screen.
3. To exit the full screen mode, press [**Esc**] on the keyboard.

- For the ActiveX viewer, you can just click an appropriate button on the page to perform Optimize Screen or Full Screen Mode as none of them will be displayed in the top of the screen.

PLAYBACK (EVENT)

1. Click the [**Playback (** **)**] button.
2. Specify the start time and end time of your search.
3. Select an event type for your search within the specified period.
4. Click the [**Search (** **)**] button.
   The search results will be displayed in the list.

- If more than 500 events are recorded within the search period, your search will be limited up to the date when the 500th event is recorded.
  For instance, if the search period is between 10th and 15th day of the month, and more than 500 events were recorded 10th through 11th, your search will be limited up to 11th day with a total of 500 events, and events after then (from 12th) will not be found.

5. Select a data item to play in the search list.
6. Click the [**Play (** **)**] button.
7. To stop playing the video, click [**Stop (** **)**].
   To return to the search screen, click [**Exit (** **)**].

PLAYBACK (TIME)

1. Click [**Search by Time (**)].
2. Click a desired date in the calendar.
   The video on the specified date will be played.
3. If the video playback is stopped, select a time and click [**Play (**)] to play the video for the selected time.
   While the video is being played, the recording time for the current video will be shown.
4. Search for the video forward or backward, and control the play speed.
   If the video is being played, the button will switch to [ ] with the information of the playback direction and speed.
   - To control the play speed
     If selecting ▶▶, the button will switch to x1, x2, x4, x8, and the play speed will increase accordingly.
     If selecting ◀◀, the button will switch to x8, x4, x2, x1, and the play speed will decrease accordingly.
   - To control the playback direction
     If you see the ▶▶ button with the play speed displayed, the video will be played forward; Whereas, if you see the ◀◀ button with the play speed displayed, the video will be played backward.
5. Move [ ] to a desired time point of the video before playing it.
   The date containing a recoding file will be highlighted in blue; the time with the event recording will be highlighted in red.

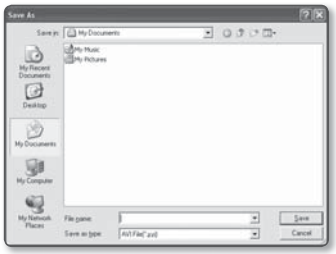
- The time search is not available with other web browsers than Internet Explorer.

To check time information of the playing video

1. Click the [**About (**)] button.
2. Date and time information appears on the screen.

To back up the searched video

1. Click [ ] on the scene to back up.
   Save as window appears.
2. Click [**Save**].
   The screenshot will be backed up to the specified path.



To play the backup video

The backup video will be saved in .avi format. The backup video can be played with any media player supporting the format on your PC.

SETUP

You can configure the video, network, event and system settings of the camera via the network.

1. In the Live screen, click [**Setup (**)].
2. The Setup screen appears.

VIDEO SETUP

Video profile

1. From the Setup menu, select the <**Video (**)> tab.
2. Click <**Video profile**>.
3. Select a <**Video profile**> number.
4. Click the input box of each item and enter / select a desired value.
   - The context menu may differ depending on the selected codec type.
   - Default profile : This is the default video profile.
   - E-mail/FTP profile : Video profile to be transferred to the specified email or FTP site.
     - Only the MJPEG codec can be set as the E-mail/FTP profile.
   - Record profile : This is the profile that is applied to video recording.
5. When done, click [**Apply (**)].

To add a video profile

You can add as many codecs as necessary so that a variety of profiles can be applied according to the recording condition.

1. Select a profile number.
2. Provide the name and select a codec.
3. Specify the conditions under which the codec will be applied.
4. Specify the details of the selected codec including resolution and frame rate.
   - Resolution : Set the video size of the H.264 and MJPEG files.
   - Framerate : Specify the frame rate.
   - Compression : Specify the compression rate of the video.
   - Maximum bitrate : Specify the maximum bit rate of the video.

     ▪ As the bit rate can be adjusted limitedly according to the resolution, frame rate and screen complexity, the actual bit rate can be greater than the maximum bit rate. So you must consider the use conditions when setting the value.

   - Bitrate control : You can select one from constant bit rate and variable bit rate for compression. Constant bit rate (CBR) varies the video quality and fixes network transfer bit rate, while variable bit rate emphasizes the quality by varying network transfer bit rate.
   - Target bitrate : Specify the bit rate at which you will transfer the video.
   - Encoding priority : You can set the video transfer method to Framerate or Compression.
   - GOP size : Select a GOP size between 1 and 15.
   - Profile : You can select the H.264 profiling method.
   - Entropy coding : Reduce the possible compression loss due to encoding.
   - Multicast(VNP) : Specify the use of the VNP protocol.
     - IPv4 : Enter an IPv4 address with which you can connect to the IPv4 network.
     - Port : Specify the video communication port.
     - TTL : Set the TTL for the VNP packet.
   - Multicast(RTP) : Specify the use of the RTP protocol.
     - IPv4 : Enter an IPv4 address with which you can connect to the IPv4 network.
     - Port : Specify the video communication port.
     - TTL : You can set the TTL for the RTP packet.

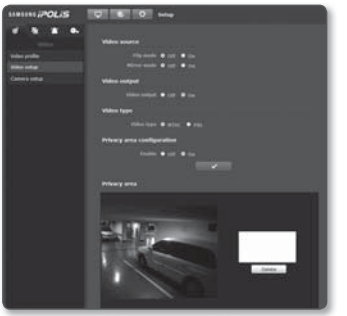
What is GOP size?

GOP(Group of Pictures) is a set of video frames for H.264 compression, indicating a collection of frames from the initial I-Frame (key frame) to the next I-Frame. GOP consists of 2 kinds of frames: I-Frame and P-Frame.

I-Frame is the basic frame for the compression, also known as Key Frame, which contains one complete image data. P-Frame contains only the data that has changed from the preceding I-Frame.

You can specify a value between 1 and 15 for the H.264 CODEC.

Video setup



1. From the Setup menu, select the <**Video (** **)**> tab.
2. Click <**Video setup**>.
3. Select a <**Video source**> mode.
   - Flip mode : Turn upside down the image that is captured by the camera.
   - Mirror mode : Flip horizontal the image that is captured by the camera.
4. Set the <**Video output**>.
   - If you select <**Off**>, the video signal will not be output via the VIDEO OUT port.
5. Select the video type.
6. Specify the privacy zone.
7. When done, click [**Apply (** **)**].

To set the privacy zone

You can specify a certain area of the camera video to be protected for your privacy.

1. Set it to <**On**>.
2. On the video screen, click a vertex of the selected area to display the dialog as shown.
3. Provide a name and color. Then, press [**OK**].
4. If you want to delete an area, select that area in the list and press [**Delete (** Delete **)**].
5. When done, click [**Apply (** **)**].

Camera setup

You can change the camera settings according to the environment where the camera is located.

1. From the Setup menu, select the <**Video (** **)**> tab.
2. Click <**Camera setup**>.
3. Configure the settings as necessary of : SSDR, White balance, Backlight, Exposure, Special, OSD, Time OSD
4. When done, click [**Apply (** **)**].
   - If a certain time (timeout: 240s) is elapsed with your not pressing the [**Apply** ( )] button after changing the settings, your changes will not be applied.

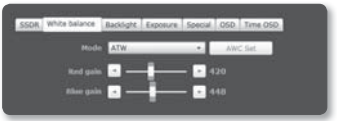
SSDR (Samsung Super Dynamic Range) Setup

In a scene where the difference between bright and dark is severe, you can increase the brightness of the dark area alone to regulate the overall brightness.

1. Select <**SSDR**>.
2. Set <**Mode**> to <**On**>.
3. Configure the <**Level**> settings as necessary.
   - Level : Adjust the level of the dynamic range.

White balance Setup

You can correct the image colors based on white under any lighting conditions.



1. Select <**White balance**>.
2. Select <**Mode**>.
   - ATW : Corrects the colors of the camera video automatically.
   - Manual : You can adjust the red and blue gains of the camera video manually.
   - AWC : Corrects the colors of the camera video to be optimized to the current lighting condition and screen mode.
     You may need readjustment if the lighting condition is changed.
   - Outdoor : Automatically corrects the video colors of the camera to be optimized to the outdoor environment.
   - Indoor : Automatically corrects the video colors of the camera to be optimized to the indoor environment.

▪ In AWC mode, click the [**AWC Set**] button if you want to keep the white balance level of the current image.

BLC Setup

You can specify a desired area on the video manually and set the area to be displayed more clearly.

1. Select <**Backlight**>.
2. Set <**Mode**> to <**BLC**>.
3. Set <**BLC level**>.
   You can change the level to adjust the brightness of the monitoring area.
4. Set the <**Top, Bottom, Left, Right**> levels to specify the target area.

Exposure Setup

You can adjust the exposure level of the camera.

1. Select <**Exposure**>.
2. Select each item and set it properly.
   - Brightness : Adjust the screen brightness.
   - Shutter mode : Adjust the electronic shutter of the camera.
     - ESC (Electronic shutter control) : Adjust the shutter speed automatically according to the ambient brightness.
     - Manual : Adjust the shutter speed of the camera manually.
     - A.FLK (Anti flicker) : Select this feature if you encounter a flickering screen due to a frequency mismatch with the ambient lighting.
   - Shutter speed : Control the shutter speed manually.
   - SSNR3 : Specify the use of noise reduction.
   - SSNR3 level : Adjust the noise reduction level.
   - Sens-up mode : Automatically senses the darkness level at night or in a low contrast scene and extends the accumulation time accordingly for a bright and sharp image.
     - If you set the shutter mode to Manual/A.FLK, SENS-UP mode will be deactivated.
     - The greater the Sens-Up factor is, the brighter the screen becomes but it may result in an afterimage or video delay.

- Sens-up limit : Set the work condition to Auto mode in a low contrast scene.
- AGC mode : Adjust the gain value of the video (that, in particular, was recorded at a low contrast scene and had a lower brightness level than normal) to control the video brightness.

Special Setup

1. Select <**Special**>.
2. Select each item and set it properly.

- Day & night : You can switch the mode to adjust the black and white level as well as the colors.
  - Color : Always displays the video in colors.
  - B/W : Always displays the video in black and white.
  - Auto : Displays in color mode during normal daytime and switches to black and white mode in a low contrast scene at night.
    - If you set the AGC mode to OFF from <**Exposure**>, the AUTO DAY/NIGHT mode will be disabled accordingly.
  - Externel B/W : Control the image modes of Color and B/W when an external IR is synchronized via the Alarm In port.
- Dwell time : This is the time while each applicable lighting condition is kept in order to enable the switch between day and night modes.
- Duration : Adjust the speed of the lighting that trips the mode switch.
- Sharpness mode : Adjust the overall sharpness of the image.
  If selecting <**On**>, you can adjust the sharpness of the image.
- Sharpness level : The higher the level is, the sharper and clearer the outline of the image becomes.
- Gamma : Adjust the contrast of the image.
- Color level : Adjust the color level of the image.
- Alarm in : Set the image to Color or B/W depending on the state of the alarm sensor in sync with the IR.
  - If the Day & Night mode is set to Externel B/W, the alarm-in function of the event-alarm input page will be disabled.
- Negative mode : Display the reverse image of the video.

OSD Setup

1. Select <**OSD**>.
2. Select each item and set it properly.
   - Camera title : Use alphanumeric characters in the list and enter a desired title in the bottom input line.
     - You can enter up to 15 characters for the title.
   - Camera title position x, y : Specify the coordinates where the camera title is displayed.

Time OSD Setup

1. Select <**Time OSD**>.
2. Select each item and set it properly.
   - Time display : Specify the use of time display.
   - Date format : Specify the date format that will be displayed on the screen.
   - Time position display X, Y : Specify the position of time.
   - Display weekday : Specify whether displays the day of the week on the screen.

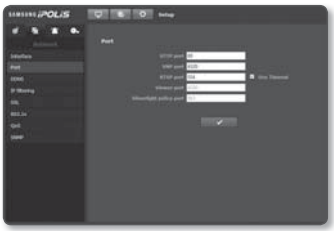
NETWORK SETUP

Interface

1. From the Setup menu, select the <**Network ( )**> tab.
2. Click <**Interface**>.
3. Set the <**Interface**> and <**IPv6 setup**> as necessary.
   - IP type : Select an IP connection type.
     - Manual : Specify the IP address, Subnet mask, Gateway, DNS1, and DNS2.
     - DHCP : Specify the DNS1 and DNS2.
     - PPPoE : Specify the DNS1, DNS2, Name and Password.
     - If you set it to <**Manual**>, you should specify the IP, Subnet mask, Gateway, DNS 1 & 2 manually.
   - MAC address : Shows the MAC address.
   - IP address : Displays the current IP address.
   - Subnet mask : Displays the <**Subnet mask**> for the set IP.
   - Gateway : Displays the <**Gateway**> for the set IP.
   - DNS1/DNS2 : Displays the DNS(Domain Name Service) server address.
   - IPv6 use : Specify the use of IPv6.
   - Default IPv6 Address : Obtains the IPv6 address to access the IPv6 network.
     - Use Default Address Only : Use only the default IPv6 address.
     - Obtain IP address via DHCP : Display and use the IPv6 address obtained from the DHCP server.
     - Use the following IP Address : Enter an IP address manually and use it.
4. When done, click [**Apply ( )**].

- The IP addressing system will be defaulted to DHCP. If no DHCP server is found, the previous settings will be restored automatically.

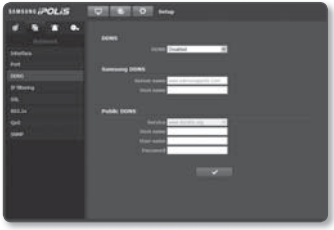
Port



1. From the Setup menu, select the <**Network (** **)**> tab.
2. Click <**Port**>.
3. Type in each item in the Port menu as necessary.
   - Neither the port range between 0 and 1023 nor port 3702 is available.
   - HTTP port : HTTP port used to access the camera via the web browser.
     The default is 80(TCP).
   - VNP port : Set a port used to transfer video signals with the Samsung protocols.
   - RTSP port : Used to transfer videos in the RTSP mode; the default is 554.
   - Viewer port : Used to transfer videos to the Web Viewer; the default is 4520.
   - Silverlight policy port : Silverlight is used to permit to acquire a network connection; the default is 943.
     - The port range of the Viewer is between 4502 and 4534. If the VNP port is with this effective range, the Viewer port should be specified the same as the VNP port.
     - You cannot change the Viewer/Silverlight policy port of a camera.
4. When done, click [**Apply (** **)**].

DDNS

DDNS is an abbreviation of Dynamic Domain Name Service that converts the IP address of a camera into a general Host Name so that the user can easily remember it.



1. From the Setup menu, select the <**Network (** **)**> tab.
2. Click <**DDNS**>.
3. Select <**DDNS**>.
4. Type in the DDNS items according to the selected type.
   - Samsung DDNS : Select this if you use the DDNS server provided by Samsung Techwin.

- Public DDNS : Select one of provided public DDNS servers when you use a public DDNS server.
  - Host name : Enter the name of the host (i.e., host name of Dyndns) that is registered with the DDNS server.
  - User name : Enter the user name for the DDNS service. (i.e., user ID that is registered with Dyndns)
  - Password : Enter the password for the DDNS service. (i.e., password that is registered with Dyndns)

5. When done, click [**Apply (** ✓ **)**].

Registering with DDNS

To register your product with the Samsung DDNS

1. Visit the iPOLiS web site(www.samsungipolis.com) and sign in with a registered account.

2. From the top menu bar, select <**DDNS SERVICE**> - <**MY DDNS**>.

3. Click [**PRODUCT REGISTRATION**].
4. Enter the product ID.
   - You must perform the duplicate check for the ID that you entered.

5. Select a <**CLASSIFICATION**> and specify the <**MODEL NUMBER**>.
6. Specify the product location with a description if necessary.
7. Click [**REGISTRATION**].
   The product will be added to the product list that you can check.

To connect to the Samsung DDNS in camera setup

1. From the DDNS setup page, set <**DDNS**> to <**Samsung DDNS**>.
2. Provide the <**Host name**> that you registered product ID with the DDNS site.
3. Click [**Apply (** ✓ **)**].
   When the connection is successfully made, you will see the message of <**(Success)**> on the screen.

Configuring public DDNS in Camera Settings

1. Open the DDNS settings page and select <**Public DDNS**> for <**DDNS**>.
2. Enter the corresponding site's host name, user name and password.
3. Click [**Apply (** ✓ **)**] button.
   If the connection properly establishes, <**(Success)**> appears.
4. When done, click [**Apply (** ✓ **)**].

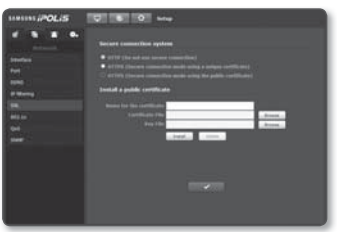
IP filtering

You can create a list of IPs that you want to grant or deny access to them.

1. From the Setup menu, select the <**Network (** **)**> tab.
2. Click <**IP filtering**>.
3. Select <**Filtering type**>.
   - Deny : If selecting this, access from those IPs that are added to the filtering will be restricted.
   - Allow : If selecting this, access from only those IPs that are added to the filtering will be accepted.
4. Provide the IP that you want to grant or deny access from.
   For IPv4, the default IP address is 0.0.0.0, and the default prefix is 32.
5. Select desired IP address to be approved or rejected from the entered IP addresses. Only the selected IPs are filtered out.
6. When done, click [**Apply (** **)**].

SSL

You can select a secure connection system or install the public certificate for this purpose.



1. From the Setup menu, select the <**Network (** **)**> tab.
2. Click <**SSL**>.
3. Select a secure connection system.
   - To access the camera using HTTPS mode, you have to type the IP address for the camera in the form of "https://<Camera_IP>".
4. Search for the public certificate that you want to install on the camera.
   To install the certificate on the camera, you need to provide a certificate name (it can be arbitrarily assigned by the user), certificate file issued from the certification authority and a key file.
   - The <**HTTPS (Secure connection mode using the public certificate)**> item will be active only if there exists a public certificate installed.
5. When done, click [**Apply (** **)**].

Installing the certificate

1. Enter the certificate name.
2. Select the certificate file to be installed and certificate key, and click [**Install (** Install **)**] button.

Deleting the certificate

1. Click [**Delete (** Delete **)**] button.
2. To delete a public certificate, you should access the network video decoder in the mode of <**HTTP (Do not use secure connection)**> or <**HTTPS (Secure Connection mode using a unique certificate)**>.

802.1x

When connecting network, you can choose whether using 802.1x protocol, and then install the certification.

1. From the Setup menu, select the <**Network (** **)**> tab.
2. Click <**802.1x**>.
3. Set the <**IEEE 802.1x Setting(EAPOL using EAP-TLS)**>.
   - Enable IEEE 802.1x : Specify the use of the 802.1x protocol.
   - EAPOL Version : Select version 1 or 2.
   - EAPOL ID : Enter the EAPOL ID.
   - EAPOL Password : Enter the EAPOL password.

■ If the connected network device does not support the 802.1x protocol, the protocol will not operate properly even if you set it.

To install/remove 802.1x related certificates

1. Press the [**Browse (** Browse **)**] button for each item and select a certificate to install.
2. If no certificate is installed, you will see “Not Available” appearing next to the selected item.
3. Press the [**Install (** Install **)**] button to start installation with a message of “Installed” next to the item.
4. Press the [**Delete (** Delete **)**] button to remove the certificate.

QoS

You can specify the priority to secure a stable transfer rate for a specific IP.

1. From the Setup menu, select the <**Network (** **)**> tab.
2. Click <**QoS**>.
3. Provide the IP address.
   The default prefix is 32. For DSCP, the default is set to 63.
4. Select an IP address to which you will apply QoS.
   Only the selected IPs can be prioritized.
5. When done, click [**Apply (** **)**].

SNMP

With the SNMP protocols, the system or network admin can monitor the network devices on a remote site, and configure the environment settings.

1. From the Setup menu, select the <**Network (** **)**> tab.
2. Click <**SNMP**>.
3. Specify the <**SNMP**>.
   - Enable SNMP v1 : SNMP version 1 will be active.
   - Enable SNMP v2c : SNMP version 2 will be active.
     - Read Community : Provide the name of the read community where you can access to the SNMP information. The default name is “pubic”.
     - Write Community : Provide the name of the write community where you can access to the SNMP information. The default name is “write”.

- Enable SNMP v3 : SNMP version 3 will be active.
  - Password : Specify the default password for SNMP version 3. The default password is “admin4321”.
    - The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
      Note that the security and other related issues caused by the unchanged password shall be responsible for the user.

4. When done, click [**Apply (** ✓ **)**].

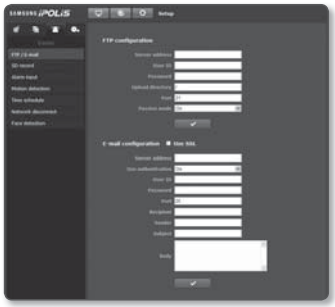
- SNMP v3 is only able to be set when the secure connection mode is HTTPS.

EVENT SETUP

FTP / E-mail

You can configure the FTP/E-mail server settings so that you can transfer the images stored in the camera to your PC if an event occurs.

1. From the Setup menu, select the <**Event (** **)**> tab.
2. Click <**FTP / E-mail**>.
3. Select <**FTP configuration**> or <**E-mail configuration**> and enter / select a desired value.
   - FTP configuration
     - Server address : Enter the IP address of the FTP server that you transfer the alarm images to.
     - User ID : Enter the user ID with which you will log in to the FTP server.



     - Password : Enter the user account password for logging into the FTP server.
     - Upload directory : Specify the FTP path where you will transfer the alarm images.
     - Port : The default port of the FTP server is 21; however, you can use a different port number according to the FTP server settings.
     - Passive mode : Select <**On**> if you need to connect in passive mode due to the firewall or the FTP server settings.

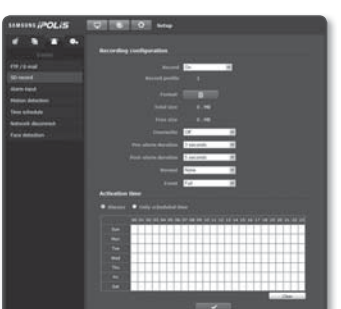
- E-mail configuration
  - Use SSL : Specify the use of SSL.
  - Server address : Enter the IP address of the email server that you use for the email transfer.
  - Use authentication : Select whether to use authorization.
  - User ID : Enter the user ID for logging into the email server.
  - Password : Enter the user account password for logging into the email server.
  - Port : The default port of the email server is 25; however, you can use a different port number according to the email server settings.
  - Recipient : Enter the address of the email recipient.
  - Sender : Enter the address of the email sender. If the sender address is incorrect, the email from the sender may be classified as SPAM by the email server and thus may not be sent.
  - Subject : Enter a subject for your email.
  - Body : Provide the text for the massage. Attach the alarm images to the email that you are preparing.

4. When done, click [**Apply (**)].

SD record

You can set the record conditions or the use of recording for the SD memory, check the size of stored data, or format the SD memory itself.

1. From the Setup menu, select the <**Event (**)> tab.
2. Click <**SD record**>.

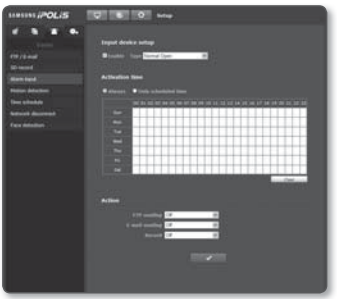


To make recording on the SD memory

1. Check the <**Total size**> and the <**Free size**>.
2. If the SD memory has a sufficient free space, set <**Record**> to <**On**>. Otherwise, check the stored data and if you find them not important, then click <**Format**> to format the SD memory.
   - If your SD memory card writes slowly, only one frame per second will be stored.
   - For a SD memory card with a large capacity, the formatting will be slowed down accordingly.
   - If the size of data grows with time, only 1 fps can be stored even if you set the record quality to Full Frame.
3. Specify the record conditions.
   - Record profile : Display the number of profile to record.
   - Overwrite : If the SD memory is full, this will delete old data and store new data in replacement.
   - Pre-alarm duration : Specify the time point before the occurrence of the alarm; starting from the time point, the images will be transferred. You can specify up to 5 seconds before the occurrence of the alarm.
   - Post-alarm duration : Specify the time point after the occurrence of the alarm; to the specified time point, the images will be transferred. You can specify up to 120 seconds after the occurrence of the alarm.
   - Normal : Make recording at a certain frame rate.
   - Event : Set the recording type for a certain event that occurs.
4. Specify the <**Activation time**>.
   - Always : Always check if an alarm occurs. It activates in operated mode when the alarm occurs.
     - If set to Always, the activation time cannot be changed.
   - Only scheduled time : Check if an alarm occurs at a specified day of the week for a specified time period. It activates in operated mode when the alarm occurs.
   - [Clear] : Reset all settings.
5. When done, click [**Apply (** ✔ **)**].

Alarm input

You can set the alarm input type, activation time, and operation mode.



1. From the Setup menu, select the <**Event (** **)**> tab.
2. Click <**Alarm input**>.
3. Specify an input device.
   - Type
     - Normal Open : It is normally open, but if it is closed, an alarm will be triggered.
     - Normal Close : It is normally closed, but if it is open, an alarm will be triggered.
4. Specify the <**Activation time**>.
   - Always : Always check if an alarm occurs. It activates in operated mode when the alarm occurs.
     - If set to Always, the activation time cannot be changed.
   - Only scheduled time : Check if an alarm occurs at a specified day of the week for a specified time period. It activates in operated mode when the alarm occurs.
   - [Clear] : Reset all settings.
5. Specify an operation that will perform if an alarm occurs.
   - FTP sending : Specify the use of FTP transfer in the alarm input setup.
   - E-mail sending : Specify the use of email transfer in the alarm input setup.
   - Record : Specify the use of recording in the alarm input setup.
6. When done, click [**Apply (** **)**].

Motion Detection

1. From the Setup menu, select the <**Event (** **)**> tab.
2. Click <**Motion Detection**>.

❖ Motion Detection

1. Specify the use of motion detection.
2. Set the motion detection mode to Mask.
   - Detect : Detect a motion that may occur in the selected area.
   - Mask : Detect a motion that may occur in other areas than the selected.
3. Select a sensitivity level of the motion detection.
   Higher the sensitivity is, the smaller motion is detected.
4. Use the drag-and-drop method to specify the detection area on the video.
   - You can specify up to 4 motion detection areas.
   - The red-marked area at the bottom is not applicable to the motion detection setting.
5. Specify the size of an object that you want to detect.
6. Select whether to mark the corresponding region on motion detection.
   - Select <**On**> to mark a box on the detected moving object on the screen.
7. Specify the activation time and activation condition.
   - For more information about <**Activation time**> and <**Action**>, refer to "**Alarm input**". (page 62)
8. When done, click [**Apply (** **)**].

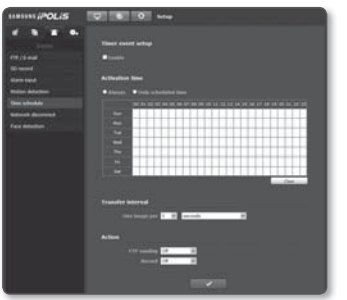
- If the camera is capturing a short-distant object, the motion detection performance may be degraded.
  The motion detection function may not work properly in the following cases:
  - The object color or brightness is similar to the background.
  - Multiple movements continue occurring at random due to a scene change or other reasons.
  - A fixed object continues moving in the same position.

- An object hides other objects behind.
- Two or more objects overlap or one object divides in multiple portions.
- Too fast object (for a proper detection, one object should be found overlapping between contiguous frames).
- Reflection / blur / shadow due to a strong light such as direct sunlight, illumination, or headlamp.
- In severe snow, rain, wind or in dawn / dusk.

Time schedule

You can configure so that an event will occur at a scheduled time regardless of the actual occurrence of the event.

1. From the Setup menu, select the <**Event (** **)**> tab.
2. Click <**Time schedule**>.

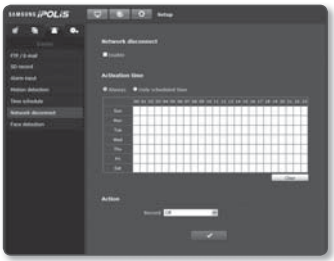


To set the timer event

1. Set <**Timer event setup**> to <**Enable**>.
2. Specify the <**Activation time**>.
   - Always : Always activates in operated mode at the set interval.
   - Only scheduled time : Periodically activates in operated mode at a specified time and date.
3. Specify the <**Transfer interval**>.
4. Specify the activation conditions.
   - FTP sending : Specify the use of the FTP transfer if an event occurs.
   - Record : Specify the use of recording if an event occurs.
5. When done, click [**Apply (** **)**].

Network disconnect

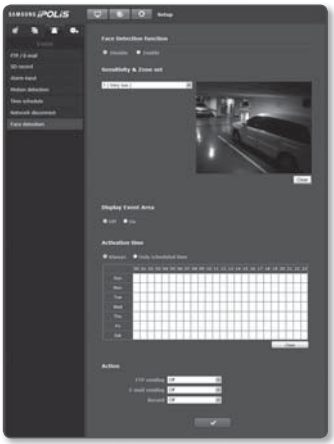
You can perform the saving/relay/preset operation after receiving an event of a physically disconnected network.



1. From the Setup menu, select the <**Event (** **)**> tab.
2. Click <**Network disconnect**>.
3. Specify the use of "Network disconnect".
4. Specify the activation time and activation condition.
   - For more information about <**Activation time**> and <**Action**>, refer to "**Alarm input**". (page 62)
5. When done, click [**Apply (** **)**].

Face detection

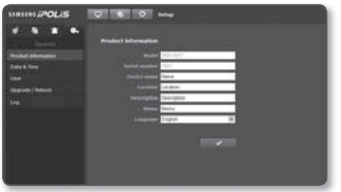
You can set to activate this function if a face is recognized on the monitoring screen.



1. From the Setup menu, select the <**Event (** **)**> tab.
2. Click <**Face detection**>.
3. Specify the use of the face detection function.
4. Select a sensitivity level for detecting the face.
   The higher the level is, the better the face will be recognized.
5. Use the drag-and-drop method to specify the face detection area.
6. Specify the display of the face detection area.
   - If you set it to <**On**>, the detection area will be boxed.
7. Specify the activation time and activation condition.
   - For more information about <**Activation time**> and <**Action**>, refer to "**Alarm input**". (page 62)
8. When done, click [**Apply (** **)**].

SYSTEM SETUP

Product information



1. From the Setup menu, select the <**System (** **)**> tab.
2. Click <**Product information**>.
3. Check the camera information, or provide details according to your network environment.
   - Device name : Provide a device name that will be displayed on the Live screen.
   - Location : Specify the location where the camera is installed.
   - Description : Provide detailed information about the camera location.
   - Memo : Provide an explanation about the camera for better understanding.
   - Language : Select a preferred language for the Web Viewer OSD.
4. When done, click [**Apply (** **)**].

▪ Product related information only allows English for input.

Date & Time

1. From the Setup menu, select the <**System (** **)**> tab.
2. Click <**Date & Time**>.
3. Specify the time and date that will be applied to the camera.
   - Current system time : Displays the current time settings of your system.
   - Timezone : Specify the local time zone based on the GMT.
   - Use daylight saving time : If checked, the time will be set one hour before the local time zone for the specified time period. This option will be displayed only in areas where DST is applied.

- System time setup : Specify the time and date that will be applied to your system.
  - Manual : Specify the time manually.
  - Synchronize with NTP server : Sync with the time of the specified server address.
  - Synchronize with PC viewer : Synchronize the time with the connected PC.

4. When done, click [**Apply (** ✓ **)**].

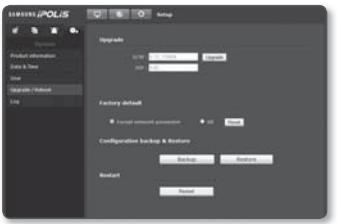
> ■ If the time settings differ between camera and PC, selecting <**Synchronize with PC viewer**> may still have a difference. So it is recommended to specify the same time settings for both camera and PC.

User

1. From the Setup menu, select the <**System (** ⚙ **)**> tab.
2. Click <**User**>.
3. Provide the necessary user information.
   - Administrator Password Change : Change the password for the administrator.
     ■ The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
     Note that the security and other related issues caused by the unchanged password shall be responsible for the user.

   - Guest setup : If <**Guest access**> is allowed, the user with the guest account who accesses the web viewer can view only the Live viewer screen.
     ■ The ID/password for the guest account is guest/guest, which cannot be changed.
   - Current users : You can change the user information and adjust the permission level for a user who is set to <**Enable**>.
     - Video : You can select a video profile in the Liver viewer screen.
     - Controls : You can control the camera menu buttons.
4. When done, click [**Apply (** ✓ **)**].

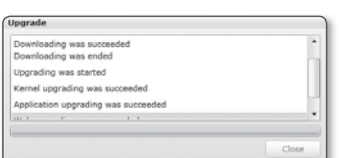
Upgrade / Reboot



1. From the Setup menu, select the <**System (** **)**> tab.
2. Click <**Upgrade / Reboot**>.
3. Select a desired item and set it appropriately.
   - Upgrade : Performs upgrading the system.
   - Factory default : Resets the system to the factory default.
     - Except network parameter : Reset the other settings except for the interface/ port/DDNS/IP filtering/SSL/802.1x/QoS/SNMP settings.
     - All : Resets all settings including the camera settings. (however, the log information will not be reset)
       - The IP addressing system will be defaulted to DHCP if you reset the camera. If no DHCP server is found, the previous settings will be restored automatically.
   - Configuration backup & Restore : Backs up the current system settings before performing the restoration process. The system is automatically restarts after backup or restoration.
   - Restart : Restarts the system.

To perform the upgrade

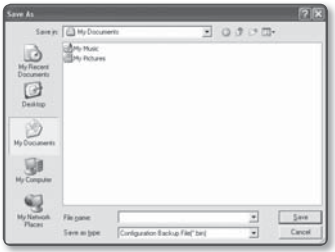
1. Click [**Upgrade**].
2. Click [**Browse**] and specify a file to upgrade.
3. Click [**Send**].
4. The "**Upgrade**" dialog appears where the progression will be shown in the bottom.



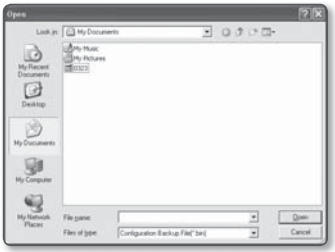
- If you forcibly terminate the upgrade process, upgrade will not be completed properly.

To save the current settings and restore the backup settings

1. Click [**Backup**].
   The Save As dialog should appear.
2. Specify the backup path with a proper file name, and click [**Save**].
   The backup file will be saved to the specified path in the format of "**.bin**".
3. To restore the backup settings, click [**Restore**].



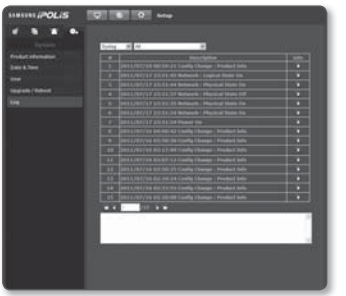
4. Select a backup file and click [**Open**].



- If you perform the backup or restoration, the web browser will be closed and the camera will reboots.

Log

You can check the system log or event log.



1. From the Setup menu, select the <**System (** **)**> tab.
2. Click <**Log**>.
3. Select a log type.
   - Syslog : You can check the system logs where any system changes are recorded including the time information.
   - Evtlog : You can check the event logs including the time information.
4. From the right log list, select an item to search for.
   - If you select <**All**> in the top left dropdown list, all logs for the applicable log type will be displayed.
5. If one page can not display all the logs available, use the bottom buttons to move to the previous, next, or the last item.

- If you want to view the details of a log, click [**Info (** **)**] in the right column of the log; the log information will be shown in the bottom pane.
- Each page displays 15 logs with the latest one displayed at the top.
- The event/system log list can contain up to 1000 logs; after that, the existing logs will be deleted from the oldest one each time a new log is created.

SPECIFICATION

Items		Description
Video	Imaging Device	1/4" PS CMOS
	Total Pixels	680(H) x 512(V)
	Effective Pixels	640(H) x 480(V)
	Scanning System	Progressive
	Min. Illumination	0.7 lux (F1.2)
	S / N Ratio	50dB
	Video Out	DIP Connector, for installation
Lens	Focal Length (Zoom Ratio)	3mm Fixed
	Max. Aperture Ratio	F2.0
	Angular Field of View	H : 70˚, V : 50˚
	Min. Object Distance	40cm (0.4m)
	Focus Cotrol	-
	Zoom Movement Speed	-
	Lens Type	-
	Mount Type	Board type

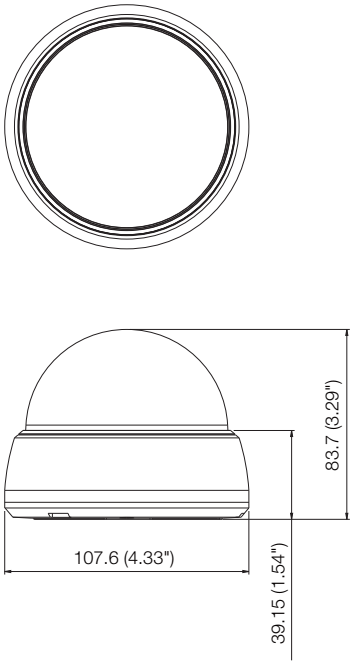
Items		Description
Pan / Tilt / Rotate	Pan Range	0°~352°
	Pan Speed	-
	Tilt Range	0°~90°
	Tilt Speed	-
	Rotate Range	0°~355°
Operational	Camera Title	Off / On (Displayed up to 15 characters)
	Day & Night	Auto (S/W) / Color / B/W
	Backlight Compensation	Off / BLC
	Wide Dynamic Range	-
	Contrast Enhancement	SSDR (Samsung Super Dynamic Range) (Off / On)
	Digital Noise Reduction	SSNRIII (2D+3D Noise Filter) (Off / On)
	Digital Image Stabilization	-
	Motion Detection	Off / On (4 programmable zones)
	Privacy Masking	Off / On (32ea, 4 Points Polygonal)
	Sens-up (Frame Integration)	Off / Auto (x2~x60)

Items		Description
Operational	Gain Control	Off / Low / Middle / High
	White Balance	ATW / AWC / Manual / Indoor / Outdoor
	Electronic Shutter Speed	Auto / A.FLK / Manual (x60~1/12000sec)
	Digital Zoom	-
	Flip / Mirror	Off / On
	Intelligent Video Analytics	Face Detection
	Alarm I/O	Input 1ea
	Remote Control Interface	-
	RS-485 Protocol	-
Network	Ethernet	RJ-45 (10/100BASE-T)
	Video Compression Format	H.264, MJPEG
	Resolution	<H.264> 640x480 / 320x240 / 160x120 <MJPEG> 640x480 / 320x240 / 160x120
	Max. Framerate	Max. 30fps at all resolutions
	Video Quality Adjustment	H.264 : Compression Level, Target Bitrate Level Control MJPEG : Quality Level Control
	Bitrate Control Method	H.264 : CBR or VBR MJPEG : VBR
	Streaming Capability	Multiple Streaming (Up to 10 Profiles)
	Audio I/O	-
	Audio Compression Format	-
	Audio Communication	-
	IP	IPv4, IPv6

Items		Description
Network	Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS
	Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access Log 802.1x Authentication
	Streaming Method	Unicast / Multicast
	Max. User Access	10 users at Unicast Mode
	Memory Slot	Micro SD/SDHC Memory Slot
	ONVIF Conformance	Yes
	Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Denish, Portuguese, Czech, Polish, Turkish, Rumanian, Serbian, Dutch, Croatian, Hungarian, Greek
	Web Viewer	Supported OS : Windows XP / VISTA / 7, MAC OS Supported Browser : Internet Explorer 7.0 or Higher, Firefox, Google Chrome, Apple Safari
	Central Management Software	NET-i viewer
Environmental	Operating Temperature / Humidity	-10°C ~ +50°C (+14°F ~ +122°F) / 20 ~ 80% RH
	Ingress Protection	-
Electrical	Input Voltage / Current	12V DC, PoE(IEEE802.3af)
	Power Consumption	Max. 3.4W (DC 12V), Max. 4W (PoE)
Mechanical	Color / Material	Ivory, Plastic
	Dimension (ØxH)	Ø107.6 x H83.7 mm
	Weight	280g

PRODUCT OVERVIEW

Unit : mm (inch)



TROUBLESHOOTING

PROBLEM	SOLUTION
I can't access the camera from a web browser.	• Check to make sure that the camera's Network settings are appropriate. • Check to make sure that all network cables have been connected properly. • If connected using DHCP, verify that the camera is able to acquire dynamic IP addresses without any problem. • If the camera is connected to a Broadband Router, verify that port forwarding is properly configured.
Viewer got disconnected during monitoring.	• Connected Viewers become disconnected upon any change to camera or network configurations. • Check all network connections. • If the camera is connected over an PPPoE network, it' s possible for Viewer to disconnect under poor network conditions.
I cannot connect to the system using a tab browser of Internet Explorer 7.0.	• When you try to connect to the system using a tab browser, the same cookie information is shared, resulting in errors when connected. Therefore, instead of using a tab browser, open a new browser window to connect to the system.
The camera connected to the network is not detected in the IP installer program.	• Turn off the firewall settings on your PC and then search the camera again.
Images overlap.	• Check whether two or more cameras are set to a single multicast address instead of different addresses. If a single address is used for multiple cameras, the images may overlap.
No image appears.	• If the transmission method is set to multicast, check whether there is a router that supports multicast in the LAN the camera is connected to.

PROBLEM	SOLUTION
Cannot record into the SD memory card.	• Check if the memory card is defective.
A SD memory card is inserted but the product does not recognize it.	• Check if the memory card is inserted in the proper direction. Operation of memory card that is formatted by other devices is not guaranteed with this camera unit • Format the memory card again in <Setup> → <Event> → <SD Record> menu.
Cannot format the SD memory card.	• Check if the memory card is defective.

OPEN SOURCE ANNOUNCEMENT

Some software components of this product incorporate source code covered under the BSD license as follows.

Component Name	License	License URL
lighttpd 1.4.25	BSD 2.0	http://www.opensource.org/licenses/bsd-license.html
librtp 1.20	BSD 1.0	

lighttpd is a secure, fast, compliant, and very flexible web-server that has been optimized for high-performance environments. It has a very low memory footprint compared to other webservers and takes care of cpu-load. Its advanced feature-set (FastCGI, CGI, Auth, Output-Compression, URL-Rewriting and many more) make lighttpd the perfect webserver-software for every server that suffers load problems.

For more additional information, send email to help.cctv@samsung.com.

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- GPL S/W
  - Base Kernel, Busybox, Sysvinit, dosfstools
- LGPL S/W
  - gLibc, Inetutils

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